



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,271	03/17/2004	Norio Sugiura	2803.70099	4200

7590 05/16/2007
Patrick G. Burns, Esq.
GREER, BURNS & CRAIN, LTD.
Suite 2500
300 South Wacker Dr.
Chicago, IL 60606

EXAMINER

DUONG, TAI V

ART UNIT	PAPER NUMBER
----------	--------------

2871

MAIL DATE	DELIVERY MODE
-----------	---------------

05/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/802,271

Applicant(s)

SUGIURA, NORIO

Examiner

Tai Duong

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9, 11-21 and 32-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9, 11, 14-17, 20, 21 and 32-34 is/are rejected.
- 7) ☒ Claim(s) 12, 13, 18 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/8/07; 1/17/07.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 04/12/2007 has been entered.

The indicated allowability of claims 9, 11, 14-17, 20, 21 and 32-34 is withdrawn in view of the newly discovered reference(s) to Yamaguchi et al (US 6,943,856) cited by Applicant. Rejections based on the newly cited reference(s) follow.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 9, 11, 16, 17 and 32-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamaguchi et al (US 6,943,856) cited by Applicant.

It is noted that claims 9, 16, 17 and 32-34 are directed to the embodiment of Fig. 18, and the instant Fig. 18 is identical to the U-SHAPE STD_Ugata3 of Fig. 7 of Yamaguchi et al. Note Figs. 1, 2 and Fig. 7 (the U-SHAPE STD_Ugata3 of Fig. 7) which identically disclose the claimed liquid crystal display device comprising a transparent

Art Unit: 2871

electrode 24; a reflecting plate 20 having wrinkle-like unevenness on the surface thereof, the wrinkle-like unevenness having a plurality of protrusions; and a liquid crystal layer 13 provided between the transparent electrode and the reflecting plate, wherein *at least part* of the wrinkle-like unevenness has a first linear part extending in a first direction, a second linear part extending from the top end of the first linear part in a second direction different from the first direction by certain angles to a predetermined side, and a third linear part extending from the top end of the second linear part in a third direction different from the second direction by certain angles to the predetermined side and a structure 18 provided beneath the reflecting plate and having unevenness, wherein the wrinkle-like unevenness has a directional pattern, the wrinkle-like unevenness extends primarily in either horizontal or vertical direction on the display plane of the LCD, the wrinkle-like unevenness of the reflecting plate is almost in accordance with the unevenness of the structure. See discussions of the recited features in column 3, line 21 – column 4, line 24; column 6, lines 34-59. As to claim 11, note column 9, lines 51-57.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 14 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamaguchi et al (US 6,943,856).

Since the instant Figure 18 and the U-SHAPE STD_Ugata3 of Fig. 7 of Yamaguchi et al are identical, the angle differences as recited in claim 14 are inherent with the LCD of the U-SHAPE STD_Ugata3 of Fig. 7 of Yamaguchi et al. Alternatively, the only difference the LCD device of the U-SHAPE STD_Ugata3 of Fig. 7 of Yamaguchi et al and that of the instant claim is Yamaguchi et al are silent about the difference between the first direction and the second direction and the difference between the second direction and the third direction being equal to or less than 45° . Thus, it would have been obvious to a person of ordinary skill in the art to have the difference between the first direction and the second direction and the difference between the second direction and the third direction being equal to or less than 45° for the ease of fabrication of the structure provided beneath the reflecting plate and having unevenness.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al (US 6,943,856) in view of Sugiura et al (Pub. No. US 2004/0145689) of record.

The only difference the LCD device of Yamaguchi et al and that of the instant claim is the average tilting angle of the wrinkle-like unevenness being 5° to 15° . Sugiura et al disclose in Fig. 27 that it was known to employ the average tilting angle of the wrinkle-like unevenness being 5° to 15° (paragraph 0166). Thus, it would have been obvious to a person of ordinary skill in the art in view of Sugiura et al to employ the average tilting angle of the wrinkle-like unevenness being 5° to 15° in Sakamoto et al for obtaining high reflectance.

Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al (US 6,943,856) in view of Applicant's Prior Art Disclosure (APAD).

APAD discloses that it was known to employ a vertically aligned type using n-type liquid crystal and the reflecting plate having a light transmission domain and a display of a transmission type and a display of a reflection type being possible (instant specification, pages 2-4). Thus, it would have been obvious to a person of ordinary skill in the art to employ in Yamaguchi's LCD device a vertically aligned type using n-type liquid crystal and the reflecting plate having a light transmission domain for obtaining a LCD device with high contrast and good visibility in bright and dark environments.

Claims 12, 13, 18 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 12 and 13 are allowed over the prior art of record because none of the prior art discloses or suggests a LCD having structure as recited in claim 9 in combination with the feature "wherein the distance between neighboring crests or troughs of the wrinkle-like unevenness differs randomly" or "wherein the distance between neighboring crests or troughs of the wrinkle-like unevenness differs from each another for each pixel".

Claims 18 and 19 are allowed for the same reasons set forth in the Office Action mailed on 12/13/2005.

Art Unit: 2871

Any inquiry concerning this communication should be directed to Tai Duong at telephone number (571) 272-2291.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

TD

TVD

05/07



TOAN TON
PRIMARY PATENT EXAMINER